

Third grade geography
by
Alice Wagenroord

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SUPPLEMENTARY MATERIAL

TO

ACCOMPANY THE OUTLINE

FOR

Third Grade Geography

Alice M. Wagenvoort, comp.

FOR THE

PUBLIC SCHOOLS

OF

Lansing, Michigan

1924

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The City of Lansing

Many teachers have experienced considerable difficulty in getting material for the teaching of third grade geography as outlined in the course of study. The following material has been contributed by teachers now teaching this work, and will undoubtedly prove very helpful. The articles here given are in the form as they were submitted by the teachers, and no attempt has been made to re-write them or present them in a unified form.

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Ass't Supt. of Schools.

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JUNIOR HIGH SCHOOLS

There are at present two junior high schools in Lansing. West Junior High School is located on W. Lenawee St. and was the first junior high school in this city. It was completed in 1920.

Pattengill Junior High School is located on Jerome St. It was named Henry R. Pattengill Junior High School in memory of Henry R. Pattengill, a prominent Michigan educator and before his death, a resident of Lansing.

Land has also recently been purchased by the Board of Education on the corner of Mt. Hope Ave. and Cedar St. for the erection of a junior high school in the southern part of the city. The work on this building will undoubtedly be started in the summer of 1924, and is to be completed for occupancy by Sept. 1st, 1925. The name is Walter H. French Junior High School.

The junior high schools provide adequate training for boys and girls of the seventh, eighth, and ninth grades.

Boys and girls, upon entering the junior high schools, are first sent to what is known as a "home room." To this room they come for the preparation of lessons, and here they keep their working materials.

In the junior high schools the children have different teachers for their various classes and go from room to room for recitation.

In the Henry R. Pattengill Junior High School each room is an organization unto itself and the pupils are held responsible for the workings of this organization. Much friendly competition arises between rooms both in studies and sports.

Last year (1923-24) the enrollment of the two junior high schools was 2460.

A cafeteria is conducted in each building, thus providing a hot lunch for those pupils who are required to remain at the building during the noon hour.

SENIOR HIGH SCHOOL

The Senior High School occupies the entire block bounded by Seymour and Capitol Avenues, and Shiawassee and Genesee Streets.

The first "Commencement" occurred in 1873. This class was comprised of three girls. The next class '74 doubled in size with three boys and three girls.

The old high school was first remodeled in 1910. At that time the lower floor of the building was given over to elementary grades.

Soon the building again became inadequate to meet the increased attendance and in 1913 the lower grades were removed from the building and the lower floor remodeled to meet the demands of high school classes.

Again in 1917 the building became overcrowded and an addition was built and first used by the class of 1919, the gymnasium being completed in 1918.

With the completion of West Junior High in 1920 the Senior High School was relieved of the ninth grade, thus relieving congestion somewhat.

At present the tenth, eleventh, and twelfth grades hold classes in the

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Senior High School, but the board of education will soon face the problem again of an overcrowded condition because of the increased attendance.

Last year the school accommodated 1510 pupils and the mid-year graduating class of 1924 numbered 108.

All the usual academic courses are here offered besides vocational, commercial and economic courses.

The Lansing High School has the reputation of being one of the best high schools in the state. It is of course on the approved list of the University of Michigan as well as that of the North Central Association.

THE OPEN AIR SCHOOLS

There are at present two Open-Air Schools in Lansing, and more rooms for this purpose will be opened whenever they are needed.

One Open-Air School is located in the Townsend Street School. This building is used on account of its central location, and its accessibility by street car from all parts of the city. The other is in the East Park School. This school accommodates children on the east side of the city.

The purpose of the Open Air School is to improve the physically weak children, and at the same time enable them to keep up with the regular school work.

Both of these schools have three rooms, which can take care of twenty-five children each. Two of these rooms are used as class rooms, and the third is used as a rest room. The older ones are in one room and the younger children are in the other.

No child with tuberculosis or other communicable or infectious disease is admitted. In fact, no child can enter without a physician's statement as to his condition.

Records of the children's condition are given to the physicians if they desire them.

Practically all subjects are taught as in the other schools.

A matron prepares lunches every day, which consist of sandwiches and one hot dish as soup, cereal, or vegetables. These are served at 10:00 o'clock. Milk lunches are served at 2:00 o'clock.

The children have a rest hour, on cots, one hour every afternoon.

The children are weighed and measured weekly. Charts are kept twice a month to note improvement. Special nutrition discussions are held once a week, under the Home Economics Department of the Michigan Agricultural College. The mothers are invited to attend these.

These children make rapid progress in their studies. Few children have failed to make their grades so far.

SCHOOL FOR THE DEAF

The School for the Deaf is located in the Kalamazoo Street School, on the corner of Kalamazoo and Pine Streets. It is on the car line and is easily accessible for children who live in the city and those who come from out of town. The fact that it is so near the West Junior High School makes it very convenient for the older pupils who are ready for junior high school work. These children attend junior high school classes part of the day and return to the School for the Deaf, for more work in lip reading.

There is one room with about fifteen pupils. Two teachers are in charge.

Children, as young as three years old, may enter the School for the Deaf. All subjects are taught. The children are taught to understand both spoken and written language.

If the children have any hearing, it is developed as far as possible. Instruments are sometimes used to speak to them.

Many of these children were born deaf, so they could not talk until they were taught. First, sounds are learned, then words, and last their meanings. Some sounds are taught by the children putting their hands on the teacher's face and feeling the vibrations. They learn some sounds by feeling the breath.

By putting their hands on the piano and feeling the vibrations, the children can recognize and tell the names of pieces of music. Rhythm work is also taught by the use of the piano.

The children learn to read the lips. They are not allowed to use the hands in speaking.

All the pupils when entering, are taken to an aurist and the degree and cause of deafness determined.

The School for the Deaf, is partially supported by the State and partially by the City of Lansing, but works in connection with the other schools in the city. Since the State helps pay for its upkeep, children outside of the city of Lansing are admitted free of charge.

SCHOOL FOR EXCEPTIONAL CHILDREN

There are two rooms for Exceptional Children in the Townsend Street School. They are placed in this school on account of its central location, and its accessibility by street car from all parts of the city.

The purpose of these rooms is to aid the slower children as much as possible. This is accomplished by much individual work, and the children are allowed to advance as quickly as they can. Special work is taken up, by which they can earn their living in the future.

The girls occupy one room, and the boys the other. These rooms have an average of eighteen pupils, from nine to sixteen years old.

School begins at eight-thirty and closes at three-thirty. One hour is allowed for noon. Lunches are served to those who cannot go home at noon.

The rooms are divided into three groups, but not according to grades. All the regular subjects are taught. But in addition to these the girls learn to sew and engage in other hand work. The boys have bench work, learn to cane chairs and do other manual work. Both boys and girls are taught to weave rugs and to make baskets. Sometimes the rugs are sold, and the money is used to buy material for other articles.

After the pupils are sixteen years of age, they continue their work in the part-time continuation school.

THE PART TIME CONTINUATION SCHOOL

The Part Time Continuation School is located in the East Park School building on Leshar Place across from Oak Park.

This school is maintained for the education of minors under 17 years of age who have ceased to attend the regular day schools. This school is in

session at least as many weeks in each year as the common schools of the district.

When a school district establishes such a school, it requires the attendance of every unmarried minor under 17 years of age residing or employed within the said school district, who has ceased to attend regular day school and who has not completed two years of a four year high school course, provided that the minors may be excused by the superintendent of schools in case they are physically unable to attend school, or would by part-time school attendance, be deprived of wages essential to their support or that of their family.

The required attendance is eight hours per week, four hours of which consist of supervised instruction under working conditions.

The school helps young people to make a good living. This gives them a place in civic and social life, which reflects favorably upon the morale and work shop of the community.

ST. MARY'S SCHOOL

St. Mary's School was first opened to the children of the Roman Catholic parish in the fall of 1874. This school is located in the two hundred block on N. Walnut St. There are 700 children attending, 525 in the grades and 175 in the high school. There are ten full time grade teachers and six full time high school teachers. They have five part time teachers working in both grades and high school. The music through the grades and high school is taught by a special teacher. All the physical training is done by two special teachers, a man for the boys and a woman for the girls. They also have a coach for their athletics. The Palmer system of penmanship is taught but each sister teaches her own penmanship and drawing. The high school offers a literary course, a scientific course and a business course. The business course must be taken as an elective. This school has a well equipped laboratory. St. Mary's School is on the University list. All the sisters have normal certificates and seven have degrees.

ST. CASIMER'S SCHOOL

This parish has not yet started to build its school house.

LUTHERAN EVANGELICAL ENGLISH SCHOOL

The Lutheran Evangelical English School, which is located on Kilborn Street, was founded about 1873.

THE LUTHERAN EVANGELICAL GERMAN SCHOOL

The Lutheran Evangelical German School, located on West Saginaw Street, was also founded near the same date. Each school covers the work of the first eight grades, and has an enrollment of about seventy children who are under the direction of two teachers.

THE SEVENTH DAY ADVENTIST SCHOOL

The Seventh Day Adventist School is located on West St. Joe Street. These schools follow the outline given to the public schools of Lansing, only having in addition special religious instruction.

SCHOOL FOR THE BLIND

The Michigan School for the Blind is located in the northwest part of the city of Lansing. This institution is supported by the state. Blind persons and those whose defective sight prevents them from going to the public school may go there. The object of the school is to send the students out into the world ready to do the things of life so that they can earn a living.

The campus consists of twenty acres of ground. The principal buildings are the administration building, school, girls' dormitory, hospital, trades building, superintendent's cottage and boys' dormitory. The trades building has full equipment for teaching chair caning and repairing; piano tuning, repairing and construction; carpet and rug weaving; broom and brush making; hammock and nets of all kinds; basket making; pottery work; shoe repairing. They learn to read books printed in several forms of raised letters and to write dotted characters representing letters which they can read by touch for themselves. They also learn to operate an ordinary typewriter to enable them to write their own letters also the use of a dictaphone. The course of study is practically the same as that offered at other schools, beginning with the kindergarten through the high school. Many of the students take up music and different courses are offered them. Domestic science and domestic art are of the greatest importance to the girls of this school. For over sixty years the state has undertaken to instruct its boys and girls who are deprived of sight. Since 1881 the school has had a separate existence in Lansing. Each succeeding year adds to the opportunities offered by the state to her afflicted boys and girls.

The school begins the second week in September and continues forty weeks. They have a compulsory school law between the ages of seven and and nineteen. The advantages of the School for the Blind are free to every blind person in Michigan.

THE INDUSTRIAL SCHOOL

The Michigan Industrial School for Boys is located on North Pennsylvania Avenue.

It is on the east side of the city. The object of the institution is the correction and reformation of juvenile offenders. The state endeavors to rescue them and give them the comforts and care of a home as well as an education and to teach them a useful trade.

The grounds and farm contain about one thousand acres.

This year the legislature appropriated six hundred thousand dollars which will be used for improvement. There are eight new cottages which will make a total of twenty-two.

The principal buildings are the administrative building which contains the offices, dining-halls and kitchens; the chapel; and the hospital.

The boys from the special through the fifth grades are in school every

day, from the sixth through the ninth they alternate every other day in work. The work in all grades is done in the central school building. They have six special teachers and thirteen regular teachers and four hundred and sixty-five boys. They also have two ungraded rooms. The new courses added to the vocational program are the auto mechanics, machine shop and electrical course. They have a new gymnasium which the boys enjoy a great deal. A great amount of stress has been laid on physical training. Two thousand dollars worth of playground equipment has been bought. They have a new greenhouse which doubles its size, new power plant and new kitchen and bakery. The boys do all of the work.

The industries of the school consists of manual training, trades, teaching of gardening, dairying and general farming, and teaching the barber trade. They make all clothing worn by the boys. The shoe shop manufactures all the shoes worn by the boys while here. A magazine is printed every month and sent to the girls' school at Adrian. A good many follow the trades they have learned here after they leave the institution. The boys have very good medical care. They have one resident doctor and three graduate nurses.

The school was first opened in 1859. The school has changed from the nature of a prison to a school with no prison like surroundings.

Boys cannot enter before the age of twelve and are automatically discharged at the age of seventeen unless they are committed at the age of seventeen then they are discharged at the age of eighteen. They are committed to the industrial school through the probate court of the State of Michigan. After one year's residence a worthy boy may be paroled.

MICHIGAN AGRICULTURAL COLLEGE

Location:

The Michigan Agricultural College is located at East Lansing, Michigan, three and one half miles east of Lansing and is connected with that city by an electric railway.

History:

In 1849 the Michigan State Agricultural Society was organized in Lansing. This organization began agitating the question of establishing a state agricultural school.

In 1853 the University established a Chair of Agriculture. It was discontinued the next year. In 1855 the legislature passed an act which resulted in the establishment of the present M. A. C. apart from the university.

In 1855 the executive committee of the Agricultural Society accepted the offering of the present site.

The funds for the purchase of lands and erection of buildings were derived from the sale of what were known as salt spring lands. The amount derived from the sale of these lands before the opening of the college, was \$56,320.

In 1857, Joseph R. Williams, a graduate of Harvard, was appointed president. On May 13, 1857 the College was dedicated. It was the first state institution in the United States to offer instruction in scientific and practical agriculture.

General Information:

While agriculture was the first course of study established, the work of

the institution has grown and expanded offering courses of study suited to the demands of practically every college student.

Courses of Study:

The courses of study offered are, Agriculture, Engineering, Home Economics, Veterinary Medicine, Forestry, Applied Science, and Liberal Arts. Faculty: The faculty of the college includes more than two hundred professors and instructors. The college president is Kenyon L. Butterfield. He accepted the presidency of the College in 1924.

Buildings:

The College has more than sixty buildings on the campus. The latest units completed are a Library and a Home Economics building, costing nearly a half million dollars each. A concrete athletic stadium with 16,000 seat capacity, ranks as the finest equipment in the state. A magnificent student Union building is now under construction.

Campus:

The M. A. C. campus is frequently called the most beautiful college campus in America. There are nearly 100 acres in the "front" campus, in addition to the hundreds of acres included in the college farm lands.

Extension Work:

The Experiment Station carries on broad and practical program of research and investigation. The extension work is carried on cooperatively with the United States Department of Agriculture. The Experiment Station receives \$30,000 a year from the United States government, supplemented by money from the state. The work is carried on through the county agricultural agents, boys' and girls' club work and farmers' institutes.

Admission:

Graduates of approved high schools are admitted to the four-year courses of the college.

THE CITY HALL

The City Hall is a gray stone building located on the corner of Capitol Avenue and Ottawa Street. It was built by the City in 1896. In it are the offices of the Mayor, the City Clerk, the Treasurer, the Assessor, the Health Department, Electric Light and Water Board, Board of Education, the County Clerk, the Sheriff, City Engineer, City Attorney, City Comptroller, Public Works, Poor Department, and the City Garbage. The Court Room, Council Rooms, and Police Headquarters are also there.

The old City Hall was built in 1882. It is the red brick building on East Michigan Avenue now occupied by the Gas Company. It was built by Mr. Barnes and the upstairs rented to the city.

THE CARNEGIE LIBRARY

The Carnegie Library is for the use of the people of Lansing and East Lansing. It occupies the southern part of the Senior High School grounds. The building was completed on February 22nd, 1905.

This library is under the direction of the City Board of Education. According to a report of April 1, 1924, it contains 38,991 volumes.

The first floor is given over to books for reference and loaning. The latest fiction books may be borrowed for one week while others are loaned for two or four weeks at a time. This portion of the library is intended to supply the needs of the adult population of Lansing and East Lansing.

The juvenile department is located on the second floor in one large room. This department is open every day except Sundays from nine o'clock to six o'clock. On Mondays and Saturdays it is open from nine o'clock in the morning to nine o'clock at night. It contains over 7,800 volumes in all which are suitable for children up to and through the junior high schools. The juvenile department also has a picture and stereoscope collection which may be used by teachers for presenting to classes.

There are branch libraries located at the following schools: Allen, Cedar, Christianity, Foster, Franklin, Larch, Logan, Moores Park, Warner and both the East and the West Junior High Schools. These libraries are made up of from two hundred to three hundred books suitable for children and parents and are partially changed twice a year. The junior high school collections are permanent and are added to from time to time. The junior high school libraries are open every day except Saturdays and Sundays while those at the other branches are open one afternoon a week from half past three to half past five. Books may be borrowed from the branch libraries as from the adult and juvenile departments.

THE STATE LIBRARY

The State Library is housed on the first and second floors of the north wing of the State Office Building. This library belongs to the people of the State of Michigan and all of its departments are for their use.

Books of all kinds may be borrowed from here for a period of two weeks with a renewal of one week. Information regarding any subject is obtainable from the reference department and the clipping bureau.

The traveling library department carries the benefit of the State Library direct to the people through the schools, Sunday schools, granges, clubs or any educational or literary organization. Traveling libraries are made up of from forty to fifty selected books. These collections may be kept for from six to nine months.

Special libraries are sent out to women's clubs, schools, colleges, camps and other libraries upon request. These are made up of books, pamphlets and articles from the clipping files relating to whatever subjects upon which the organization to whom they are loaned desires information.

The library also maintains a department which loans framed and unframed pictures and which has a large permanent picture collection on exhibition in its art room.

THE STATE CAPITOL

The State Capitol is located in the center of a square tract of land containing ten acres, the main front facing east. The block has a frontage on Capitol Avenue of 660 feet from north to south, and a depth from east to west of $742\frac{1}{2}$ feet.

When Michigan became a state the new constitution provided that the capitol should be at Detroit or some such other place as the legislature

might designate until 1847, when a permanent place should be chosen. As the territorial government had been at Detroit and as that was most convenient the legislature continued to meet there in what was later known as Fireman's Hall on Jefferson Avenue, until 1847.

The legislature of that year had to decide on a permanent place and after long debates it was decided to locate it in the northwest corner of Ingham County, where Lansing now is. At that time there was a dense forest here, a few scattered houses and a lumber camp, known as Page's Sawmill. There was no railroad and not even a good wagon road from any direction.

But before the legislature met in 1848 the roads had been improved, a number of residences built and a place provided for the meetings. This was the old "State House," a building 60 by 100 feet, two stories high. It stood on Washington Avenue south of Allegan Street. The village that grew up around the Capitol was first called Michigan, but was soon changed to Lansing.

The corner stone of the new Capitol was laid October 2, 1873. The Capitol was finally completed in 1878 at a total cost of \$1,510,130.59. It was dedicated and occupied in January, 1879.

The capitol is at present occupied by the legislature when in session, the governor, the state officers, the supreme court and the state administrative board.

THE STATE BUILDING

The State Building, which is one block southwest from the Capitol, is in a square bounded by Walnut, Washtenaw, Chestnut and Kalamazoo streets.

Its main entrance is on Walnut Street. It is 291 feet long at the front and 155 feet wide at the wings. The classic architecture of the building is that now very generally employed in designing office and insurance buildings. The construction is accepted as fireproof.

It was a month after war started between us and Germany, that the Michigan Legislature, May 10, 1917, awoke to a very acute housing problem. The state records and the lives of the state employes were at continual hazard, scattered about the city in inflammable buildings. The Capitol and old State Block were spilling over; business was fine, and office room correspondingly hard to get. So the legislature that day voted \$800,000 to build a new modern "State Office and Library." Subsequent appropriations cheerfully doled out to make the total \$2,857,500. The building was put up without issuing bonds.

The corner-stone of the office building was laid November 25, 1919. The history of the finishing of the building is that of one continuous struggle against rising prices. The building was ready for occupancy January 1, 1922. In the new building, including basement and mezzanine floor are 270,000 square feet. The two ends of the building extend back so as to make two sides of a court. There are three passenger elevators, one freight elevator, a telephone exchange, a branch post-office with mail shutles on every floor. The exterior walls are stone finished and the frame work is re-enforced concrete.

The State Building was erected for the appointed offices. The Department of Health and laboratories are on the eighth floor. The Agricultural Department's laboratory is in the south end of the eighth floor.

The hearing room for the Department of Labor and Industry, which is sort of a court room, is on the sixth floor.

On the fifth floor is the hearing room for the Public Utilities Commission. The Department of Banking is on the fourth floor. The State Highway Department is also on this floor.

The third floor houses the Conservation Department.

On the second floor you will find the Department of Public Safety. The Securities Commission has a hearing-room on this floor. There is also an assembly room that will seat 200 people.

The Adjutant General and the Quartermaster General have a large share of the ground floor. The museum occupies the southwest corner of the first floor, including the Pioneer room, Indian room, and other groups of materials and things which are interesting not only to citizens of Michigan but to residents outside the State. The State Library occupies the north end with an entrance of its own.

THE LANSING POST OFFICE

A post-office was first established in Lansing in May, 1847. George W. Peck was the first postmaster, and the office was kept in the store of Messrs. Bush and Thomas, which was located on the east side of Grand River, near the old Main Street bridge over that stream.

The mails for Lansing previous to the establishment of a post-office had been carried back and forth by a post-rider between Lansing and Jackson. That year it was moved to a frame building near where the Hudson House stood. In 1850 it was moved to a frame building in the place where the Sugar Bowl now stands. In 1853 it was moved south again near the Lansing House, which was replaced by the Downey Hotel. In 1860 it was moved to the building on the site of the Sprowl Brothers' Store. Then it was moved to the rear of the Second State National Bank which stood where the Lansing State Savings Bank now stands. From there it was moved to the O'Connor store on the corner of Ottawa Street and Washington Avenue. It was moved from there to its present convenient quarters.

The Lansing post-office is a stone building on the corner of Michigan and Capitol Avenue. It is a federal building and was first occupied in 1895. In 1914 it was remodelled and the part north of the tower was added. During this time the post-office was in the State Journal Building on Grand Street.

There are five sub-stations: one at North Lansing, one at South Lansing, one at Houghton's Drug Store on the corner of Cedar Street and Michigan Avenue, one at the corner of Lathrop Street and Michigan Avenue and another at the corner of W. Ionia Street and Logan Street. (These sub-stations move frequently, and their present location should be verified.)

There are the following departments in the post-office: money order, postal savings, registered mail, mailing, general delivery, stamp and parcel post. The parcel post was established in 1913.

The post master is appointed every four years and his appointment is confirmed by the senate.

THE STATE JOURNAL

Lansing has two daily newspapers.

The State Journal was formerly The State Republican, and in the course of its history absorbed several other publications, including the Lansing

Journal in 1914, and the Lansing Press, late in 1915. The newspaper was established April 28, 1855, weekly editions being published. For a short time, beginning July 30, 1872, a small four-page daily was printed. On Jan. 5, 1875 a semi-weekly was started. Five years later a tri-weekly edition was published. On Jan. 1, 1886, the daily edition was started and daily and weekly editions were continued until fourteen years ago when the weekly edition was abandoned. Eleven years ago the publication of two editions daily was started and nine years ago three editions were published daily. In January, 1915, The State Journal moved to its own building at Ottawa St. and Grand Ave. Previous to this, it was published in the building now known as the Robert Smith building.

The State Journal uses 150 tons of paper per month. Besides the papers sold in the localities near Lansing, the carriers sell 15,000 copies daily, and the street boys sell 1500 daily. An estimation of the papers printed per year is about 10,608,000.

THE CAPITAL NEWS

The home of the "Capital News" is on 120-126 W. Washtenaw St. It occupies a two-story building.

The first Capital News was published May 26, 1921. Since then its circulation has increased until there are about 10,000 copies printed daily.

There are five different departments that take care of the work. They are: business, advertising, editorial, mechanical, and circulation.

The business department handles the general business such as the accounts.

Six men solicit the advertising.

Eleven people in the city of Lansing and twenty-five correspondents are employed in the editorial department.

In the mechanical department, the paper is printed. There are seven linotypes which cast stereotyped lines for printing. The metal in a linotype is heated to 550° F. in order to make the casting. From the linotypes, the lines are arranged in columns called "banks." These "banks" are then assembled according to pages in what is called the "make-up" form. A mould for each page is made, to fit the roller, called "mats." A lead, antimony, and tin casting is made from the mould. This alloy is the only one which will expand when cooling thus making it possible to obtain a clear cut outline of the mould. The rubber rollers are inked automatically from an ink fountain. These rollers in turn transfer the ink to the casting which is on the drum. The paper is run over the casting and then sent to be trimmed and folded.

The circulation department must make all collections and distribute the papers. There are five sub-stations in the city where the papers are taken by trucks. Seventy-five newsboys get the papers from the stations and deliver them to the customers.

HEALTH DEPARTMENT

The Health Department is located in the City Hall and has to do with contagious diseases. This department consists of health officer, quarantine officer, sanitary inspector, three school nurses, plumbing inspector, and electrical inspector.

The Health Center is at 112½ W. Allegan St. The city physician and three welfare nurses work in this department. Clinic service is given daily. Office hours of the department are between 2 and 4 P. M. Each Tuesday between 8 and 12 A. M. special attention is given to eye, ear, nose and throat. Each Wednesday 9 to 12 A. M. infants and children are examined. The second Thursday of each month from 8 A. M. to 3 P. M. is given to tubercular patients. Mental and nervous diseases are treated on the second Friday of each month between 8 A. M. and 3 P. M. Dental service is given daily by appointment from 8 to 12 A. M. Orthopedic service is given by appointment on the second Thursday of each month at 9. A. M.

HISTORY OF SPARROW HOSPITAL—1924

The idea of a hospital for Lansing was conceived in the minds of Reverend Lewis Van Driss, Mr. Barnes and Edward W. Sparrow. This was in the year 1894, the present home of Chief Justice Wiest was the place selected for the experiment. The Sisters of Charity of Cincinnati, Ohio, were invited to come to Lansing and care for the hospital. The Sisters accepted the offer on condition that there was a real need for hospital work in this vicinity. After four years they gave the work up as it proved unsuccessful and the property went back to the original donors.

Sometime later there was a second attempt by the Lansing Woman's Hospital Board and they opened a hospital on Cedar Street. This venture was more successful and under the efficient management of the Woman's Hospital Board, a greater and better institution was assured. It was at this time that Mr. Edward W. Sparrow saw an opportunity of fulfilling and completing his desire to provide for the poor and the sick a proper place for hospital work. In 1910, he made his wish known and donated the present site and \$100,000.00 for the erection of the Edward Sparrow Hospital. The construction was commenced in 1911 and dedicated on October 26, 1912. The committee in charge of the opening invited Mayor Reutter, the Common Council, and other City Officials.

The building was designed by Edwin Bowd and cost \$112,000.00. The structure is three stories high. On either side of the main entrance are the office and directors' room. Beyond the office and connected with it, is the superintendent's suite, consisting of a parlor, bed room, and private bath. An exceptional feature is the equipment of a diet room on each floor. Each of these diet rooms are completely equipped with stoves and warming ovens, and are connected with the basement kitchen by an improved type of electric driven dumb waiters. The remainder of the first floor is given over to wards and private rooms. The second floor is occupied for medical cases. The third and upper floor is devoted to surgical and maternity purposes. There is a large nursery with every equipment for caring for the babies and their general health. There is also connected with the hospital a school for training young women in the profession of nursing.

In the deed given by Mr. Edward W. Sparrow, he provided that the new hospital should be under the management of a Board of eighteen men, acting as trustees, but owing to the efficiency of the Woman's Hospital Board, they were made the acting management.

Besides the gift of Mr. Sparrow, members of his family gave \$5,000.00. Later, Dr. Julius A. Post left \$50,000.00 as a memorial to his wife, Ellen Post, but the amount was not sufficient to build and maintain a separate

hospital so the idea was conceived to build a wing to the Edward Sparrow Hospital which was opened in 1922. Mr. A. R. Hardy left in his will a house and lot and \$4,000.00 cash which was to be used for children's cases only. Before the Community Welfare Fund was established, there was an Industrial Aid Society, which was the only charitable society in Lansing at that time. When they dissolved, they turned over \$5,000.00 to be used for the care of the poor in the hospital. The Edward Sparrow Hospital is a non-profit corporation, the policy being to fix their rates to meet the bare expense for the care and maintenance of the institution. Annually, the Community Welfare Fund turns over \$12,000.00 to help defray the expenses.

At the present time, the Edward Sparrow Hospital has a capacity of 100 beds and is divided into General, Surgical, Eye, Ear, Nose and Throat, Obstetrical, Medical and Children's Departments. X-Ray and Laboratory facilities are modern and sufficient for the needs of the institution. A Dietetic Laboratory has been provided for general and for special purposes. The kitchen is complete, containing the most modern appliances for preparing foods. The hospital is equipped with all modern surgical instruments, operating room facilities, dark rooms for eyes and head operations. The maternity department is separated from the surgical and medical wards, and has besides a nursery for the babies with incubators. In connection with these many modern appliances for general hospital work, the board of management are making preparation to establish free clinics where any one can get expert medical advice. The cancer and children's clinic are now fully established and largely patronized.

A history of the Edward Sparrow Hospital would be incomplete without a few words upon the generous donor himself. Mr. E. W. Sparrow was born in Ireland and immigrated to this country with his mother. He had little of this world's goods and was known as a very poor boy. Sometime later in his life, a relative in Ireland left him a small legacy which he wisely invested in timber and iron, and subsequently in Lansing real estate which greatly increased his wealth. He was the first president of the City National Bank, and after his wife's death, removed to New York, but still held land in Lansing. His generosity was known to his fellow men and in giving the hospital to Lansing, he wished it to be considered a general hospital for receiving, caring for and healing the sick and injured without regard to race, creed, or color.

As an evidence of the appreciation and esteem in which the donor is held, a large bronze tablet has been affixed to the wall of the main vestibule just inside the entrance. The tablet bears a large bas relief of Edward W. Sparrow, underneath which is inscribed the following tribute.

"This hospital with the grounds on which it stands is the gift of Edward W. Sparrow to the people of Lansing. In grateful appreciation of his generous benefaction, this tablet is placed by the Edward W. Sparrow Hospital Association." The inscription on the plate is concluded by the following message of the Master: "Inasmuch as ye have done it unto one of the least of these my brethern, ye have done it unto me."

LANSING DETENTION HOSPITAL—1924

Up to the time of the erection and completion of the Lansing City Hospital, there was little or no provision for the care of contagious cases. This hospital was imperative and after looking over many locations for a site, the present

location was considered most convenient and accepted. It is located on East Michigan Avenue between the city limits and East Lansing.

This hospital is operated and controlled by the City Health Department and maintained by the County. Cases sent there are of a contagious nature and the patient is not free in his choice, and therefore the County considers it just to meet the expense of the patient while there. It is estimated that the cost for a patient is about \$1.95 per day. The hospital is managed by a Superintendent, one Supervising Nurse, two registered nurses, one cook, one janitor, and a maid. Its capacity is rather limited but at least thirty patients can be cared for comfortably at one time.

Previous to the erection and completion of this much needed and necessary hospital for contagious cases, an old house on the corner of North Grand and East Shiawassee, was used for this purpose. It was an old building inconvenient, insanitary, and a reflection upon the city of Lansing. The new Lansing City Hospital is modern, convenient, and pleasantly located.

ST. LAWRENCE HOSPITAL, LANSING, MICHIGAN

The "existence of St. Lawrence Hospital" was first conceived in the mind of the late Lawrence Price, of Lansing. Mr. Price included in his will a legacy of \$100,000 in behalf of his own city, with the promise that the hospital erected from this fund under the direction of the Sisterhood, should be known as St. Lawrence Hospital.

Some years have elapsed since the death of Mr. Price, but none of this fund was available. However, the work was started. Through Rev. Father John O'Rafferty, pastor of St. Mary's Church, Lansing, an opportunity was offered to begin the work on a small scale by the lease of a sanitarium on Willow St., on the banks of the Grand River.

The Sisters accepted this offer and began the necessary preparations for the opening of 1920. The assistance of Mr. Edward VerLinden made this beginning possible.

On February 2nd, 1920, the Hospital was opened, a second epidemic of influenza was just breaking out into the city, so that St. Lawrence Hospital opened none too soon for the benefit of the "flu" patients. On the second day of its existence, the hospital was filled to its full capacity, and immediately additional cots were secured to crowd in as many as possible. Not until the epidemic had subsided was it possible to have in readiness a surgical and an obstetrical department as well as the medical.

It must be noted that the citizens of Lansing manifested great appreciation of the Sisters' efforts for the welfare of the sick. The City Council sent the management the following communication in February, 1920.

Lansing, Feb. 9, 1920.

Ald. Fowler—Resolved by the city council of the city of Lansing:

Whereas, the Sisters of Mercy of the St. Lawrence Hospital have been caring for the sick during the recent epidemic in a very commendable manner, caring for those in many instances unable to care for themselves.

Therefore, Be it resolved by this council that this body for and in behalf of Lansing extend to the Sisters of Mercy of the St. Lawrence Hospital, its appreciation for their splendid work and co-operation and in caring for the sick in the present epidemic.

Resolved further, That the clerk be and he hereby is requested to mail a copy of this resolution to said Sisters of Mercy of said hospital."

Adopted by the following vote: Yeas—Ald. Britten, Brown, Doughty, Eddy, Fowler, Howe, McClellan, Neller, Newsome, Redfern, Sanders, Walters, Ward, 13.

Nays—None.

The opening of the campaign in 1922 for a new building revealed anew and confirmed the same appreciation from the public.

Much credit is due to Mr. Edmund C. Shields, attorney, who accepted the chairmanship of the hospital drive. Well acquainted with the spirit of his fellow-citizens, Mr. Shields knew how to wield his influence and touch a responsive chord in the minds and hearts of the community and to secure the enthusiastic cooperation of one and all.

A total of \$207,000 was pledged during the campaign.

At this time announcement was also made that the site of the new hospital had been donated in March by Mr. and Mrs. Joseph Gleason—a site of nearly four acres of land on Saginaw St., west of Logan St.

Plans for the new building were soon completed, Mr. Samuel D. Butterworth, a Lansing architect, designing the structure. Bids were let. Reniger Brothers of Lansing, were awarded the general contract.

April 15, 1923, the corner stone was laid with appropriate ceremonies, presided by Rt. Rev. Michael James Gallagher, D. D., Bishop of Detroit.

The Sisters of Mercy of Jackson, Michigan, assumed the responsibility of building and conducting the Hospital. The new Hospital was begun in the fall of 1922, and was dedicated April 1, 1924, and was finally opened to the public April 15, 1924.

The new St. Lawrence Hospital has a capacity of 100 beds and is divided into General, Surgical, Eye, Ear, Nose and Throat, Obstetrical, Medical and Children's Departments. Laboratory and X-Ray facilities will be provided as needs arise. The hospital staff is under the direction and supervision of Sister Mary Pius, and a corps of trained nurses. There is also a training school in connection with St. Lawrence Hospital, where young women prepare for the profession of nurse. Lectures are given by specialists, both from within and out of the city.

A Dietetic Laboratory has been provided for general and for special purposes. The kitchen is complete, containing the most modern appliances for preparing foods. A large refrigerating system has been installed and keeps all perishable food stuffs sweet and fresh. The new hospital is equipped with all modern surgical instruments, operating room facilities, dark rooms for eyes and head operations. The maternity department is separated from the surgical and medical wards and has besides a nursery for the babies. The hospital, as it stands today, has cost the sisters, five hundred thousand dollars.

THE FIRE DEPARTMENT

Lansing has had a paid fire department for over twenty years. We have six engine houses. Engine House No. 1 is located on Grand at the end of E. Allegan; No. 2 is on N. Washington Ave.; No. 3 is on Hillsdale and Sycamore Streets; No. 4 is on Bingham and Prospect Streets; No. 5 is on S. Washington Ave. and Baker St; and No. 6 is on Pennsylvania Ave. and Sheridan St. No. 1 has a crew of thirty-two men which is divided into two crews, and besides these there are the chief, assistant chief, and three telephone

operators. The other stations have two crews of five men each. They work twenty-four hours on and twenty-four hours off. The telephone operators work eight hours on duty. In case of a big fire all men are called for duty.

A fireman must be between twenty-one and thirty-five years of age, not less than five feet seven inches tall and must weigh one hundred and fifty pounds.

All fire stations are equipped with Seagrave pumps. Central's pump is one hundred fifty horse power and can throw one thousand gallons of water in a minute. No. 3 has a Seagrave pump of one hundred twenty-nine horse power that throws seven hundred fifty gallons per minute. All other pumps are the same size as No. 3.

Every pump carries two chemical tanks, five ladders, a plaster hook; a salt bucket, a leak stop, a pike pole, twenty 50 foot lengths of two and one-half inch hose, one hundred feet of three inch hose, axes, and most all engines carry two gas masks. No. 1 has an aerial truck and eighty-five feet of aerial ladder. No. 1 also has a service truck that carries eighty gallons of chemical. This truck makes all fires.

Besides putting out fires the off crew inspects all business places twice a month.

To turn in a fire alarm go to the nearest fire box, break the glass turn the key that unlocks the door, then push the lever down quickly. In the new boxes there is no glass to break, but an isinglass glass front. Now stand near the box until the department comes so that you may tell where the fire is. Detroit is the only city in Michigan that has more fire alarm boxes than Lansing. We also have a fireproof fire alarm station at Central Station.

THE POLICE DEPARTMENT

The Police Department is located in the City Hall on the corner of Ottawa Street and Capitol Avenue. This department consists of fifty-eight men. It consists of one chief, one captain, three lieutenants, three sergeants, two traffic officers, five detectives, one mechanic, three drivers, one court officer, one clerk, and thirty-seven patrolmen divided into three shifts of eight hours each. It is the work of the patrolmen to give needed information to strangers in Lansing and to protect the safety and property of the people of Lansing. The traffic officers duty is to see that all traffic regulations are enforced so that our streets are safe to travel on. The traffic officer also takes care of the traffic tower on the corner of Washington Avenue and Michigan Avenue and operates the automatic signal lanterns on the corner of Pennsylvania and Michigan, Ottawa and Washington, Allegan and Washington, Michigan and Grand, Michigan and Capitol, and Allegan and Capitol.

PUBLIC PARKS AND CEMETERIES

The city parks are quite plentiful and well located. They are in most cases spots of beauty as well as rest and recreation centers. A number of them contain swings, slides, teeters and other apparatus suitable to afford children the proper sort of amusement.

The city forester has charge of the upkeep of these parks as well as the boulevards or city lawns such as are found on Pennsylvania and Barnes

Avenues. Under him are gardeners and mowers who have direct care of some certain park or section of city owned lawn.

Moores Park is located on Grand River. It is in the south west portion of our city.

Oak Park or East Side Park is quite centrally located in the north east section, between East Saginaw and East Genesee Streets and directly east of the M. C. tracks.

Potter Park which is at the extreme south end of Pennsylvania is easily reached by street car.

Durant Park is located on North Washington Avenue between Saginaw and Madison Streets, and Ferris Park, located between Shiawassee, Genesee, Chestnut and Pine Streets, along with minor street Parks complete the list.

There are two well kept cemeteries in Lansing namely Mt. Hope and Deepdale. The former is located on Mt. Hope Avenue in the south east section of Lansing and the latter in the south west section near Waverly Park.

GARBAGE DEPARTMENT

Every city has to have some means of garbage disposal. Lansing has the City Garbage Department with its office in the City Hall. People of Lansing who desire may, by paying \$1.00 a year, have their garbage carried away once a week. The department furnishes cans suitable for this. It is taken by truck, in these receptacles, to the piggery about three and one-half miles northwest of the city, going out on West Saginaw street. There it is fed to pigs which are thus fattened for market.

DEPARTMENT OF PUBLIC WORKS

The work of this department is wholly taking care of streets. At the present time they have in use two motor driven street sweepers used in keeping the pavements clean and thus protecting the gutters. In addition to this they employ a varied number of men to sweep by hand. However this number is decreased greatly with each purchase of a motor sweeper.

The winter snow storms make it necessary for the city to employ men and horses to operate snow plows on the streets and sidewalks often enough to make them clear for walking. In Lansing these men are paid by the trip.

In summer it is the duty of this department to keep the weeds cut along the city highways or on any city owned property. Also, during the warm dry months they keep 4 motor driven sprinklers working to lay the dust on the gravel streets and car lines.

The grading, paving and side walk laying are taken care of by the City Engineer. Many thousands of dollars are spent each year for each of these. Lansing is growing each year so there is constant call for the building of new streets.

The expenses of this department are paid, though indirectly, by the tax payers of Lansing and every resident of this city benefits by the work done.

THE FLOUR INDUSTRY IN LANSING

The history of milling and the making of flour in Lansing started with the erection of a mill, in 1837, which is now known as The Christian Breisch

Milling Co. and located on the corner of East Franklin Ave. and Turner Street. Some years later, in 1856, the Thoman Milling Co. was founded on its present site at North Grand Ave. and East Ottawa Street. The rapid growth of the city made a ready market, and shortly after, followed the erection of the Walton Mills on Wall Street close to the site of the pioneer mill. Both the Walton and Breisch mills being situated as they are on the banks of the Grand River, secure their power from large water turbines—wheels with paddle-shaped spokes, which look much like the side wheels of the first steam boats, and which are turned by the flow of water beneath them.

The routine of making flour is much the same in all three of these mills. The wheat as it arrives at the mills contains much straw, dirt and other foreign substances which are taken out by fanning with strong currents of air while the grain is being shaken vigorously. The wheat travels from there into a rapidly revolving cylinder where the surface of the kernels is polished clean by friction. A bath of steam moistens and toughens the bran or outside covering of the kernel so that it comes off practically whole in crushing process which follows. This bran when sorted off is known as 'tailings.' The crushing is done by passing the grain through a series of rollers or 'break rolls,' each one being set a bit finer than the previous one. At each 'break' a part of the wheat is reduced to fine flour, but the wheat germ is tough and flattens out instead of being crushed to powder and when sorted off is known as 'middlings.' The flour which has been taken off after each 'break' is sifted through countless sheets of specially made silk cloth and finally passes on to the packing machine where it is weighed and done up in paper sacks and made ready for market. The Breisch Mills sell their product under the name of White Poppy Flour and the Thoman Mills use the trade name of Moss Rose.

The combined capacity of these three mills is about 600 barrels per day—enough to make approximately 120,000 loaves of bread—and whereas practically all of the wheat milled is grown in the near vicinity of Lansing, so does the same community make a ready market for the finished product, flour.

THE LANSING BAKERIES

The largest wholesale bakery in Lansing is that of the Lawrence Co. on the corner of Shiawassee and Cedar Streets. The Lawrence Bakery was opened on West Michigan Avenue in 1894. About 1906 or 1907 it was moved to a new building on Grand Ave. In 1922 it was moved to the present location.

The plant represents an investment of more than a half million dollars. They do a yearly business of about \$700,000. They use 25000 bbls. of bread flour per year and 2000 bbls. of cake flour.

Between 85 and 90 men and women are employed, and they make use of 18 trucks. There are 5 trucks which go out to towns within a 50 miles distance. The bakery produces 2,500 lbs. of bread a day and \$400 worth of cake.

Method of making bread.

The choicest flour is used, it is weighed and the proper kinds blended together by four siftings, through huge sifters hung from the ceiling. Then the flour is conveyed to the top floor, where the sponge for bread is mixed.

The sponge room contains a large ice box where the ingredients are kept cool. The ingredients are carefully weighed and then 60% of the flour, Fleischman's yeast and water are mixed. The sponge is run out into steel troughs and wheeled to a very warm room where it stays for four hours. Then the sponge is mixed and the remaining ingredients added. The air in the sponge room is changed at frequent intervals and the floors are scrubbed many times a day.

After the sponge raises, it is run out of the steel troughs into the mixers on the floor below. Here it is mixed again and ready to be made into loaves.

A machine now weighs the dough and cuts off the necessary amount for each loaf. The loaves go to the rounding machine after which they are ready to be put into the pans.

The bread is taken into another room and let raise in the pans for 45 minutes before it goes to the ovens.

The ovens bake 2000 loaves at one time. As soon as the loaves are baked they tumble from the rear of the oven. The bread is taken from the four-loaf tins and placed on an endless belt which carries it to another endless belt or cooler where it remains for an hour and a half before it goes to the wrapping machine.

The wrapping machine is electrically operated. The paraffine wrapping paper is printed in rolls. As the loaf reaches its place over the paper the machine brings the sheet over the loaf and folds each end at one time, as it passes along the wrapped loaf comes in contact with hot plates on the bottom and sides which melt the paraffine to seal the package. Now the bread is ready for market scarcely having been touched by human hands.

There are three cake dough mixing machines. In the cake room is to be found the cookie dropping machine, a pie crust roller, and a 40 foot traveling oven for baking pies and cakes. The oven is operated the same as the bread oven.

The doughnut machine is in a separate room. It has a capacity of 100 dozen doughnuts, per hour.

WHOLESALE AND RETAIL BAKERIES

There are many bakeries in Lansing, some of the largest wholesale bakeries are:

Hekman Biscuit Co., E. Michigan Avenue.
Lawrence Baking Co., Corner Cedar and Shiawassee Sts.
Manning Baking Co., Saginaw St.
The Schust Co., E. Michigan Avenue.

A few bakeries do both wholesale and retail work.

Columbia Bakery, Case St.
Murphy and Timmer, E. Michigan Avenue.
Michigan Baking Co., E. Michigan Avenue.

There are also many retail bakeries.

Blanken and Clark, E. Franklin Avenue.

Hoeflinger's Bakery, N. Washington Avenue and many smaller ones.

Most of the bakeries use spring wheat from the western states for their bread flour. The lard is gotten from the large meat packing centers, while other supplies are purchased from the groceries of Lansing.

The bakeries have trucks and send out bread, cakes, cookies, pies, and doughnuts to their branch bakeries and to the grocery stores.

Because of so many Lansing women working outside their homes there is a great demand for baked goods in this city.

DAIRIES OF LANSING

Lansing has many dairies. The largest are: Winans located on 228 E. Main St., Lansing Dairy 518 N. Cedar St., West Side Dairy 1014 S. Walnut St.

The milk that supplies these dairies is collected from the farmers who live in the country around Lansing. Each vicinity establishes a milk route. Every morning at a very early hour the farmer places his can of whole milk by his driveway, which is collected by a truck and taken to the creamery.

Upon reaching the creamery it is weighed, and in the larger dairies clarified, that is run through a machine similar to a separator that separates cream from the skim milk. In this process all particles of dirt that were not taken out by straining is removed. The milk then is sent to a large tank that holds 400 gallons and more in the larger dairies, which is equipped through the center with a coiled metal tube about two inches in diameter. This is called the pasteurizing tank. These coiled tubes are filled with boiling water and steam which heats the milk to a temperature of 140° F. It is kept at this temperature for 30 minutes, then passes over a set of tubes that are filled with ice water that has been chilled by ammonia. The milk is cooled to a temperature of 40° and is kept at this temperature until it leaves the dairy. As the milk passes from the cooling department it goes to the bottling machine which consists of a large circular tank with several spouts leading from the bottom. The empty bottles are placed on a revolving belt. As the bottles pass under these spouts, a lever is pulled. The bottles are filled and pass along on the belt to the capping machine where another lever is operated which presses a cap closely over the bottles. The bottles then pass on and are packed in cases and stored in the refrigerator room ready to be delivered.

Part of the whole milk is run through a cream separator in which the cream is separated from the skim milk. The cream is bottled in the same manner. The skim milk is sold to the farmer or allowed to sour and made into cottage cheese.

THE SUGAR FACTORY

The Lansing Sugar Factory is located at the corner of Seymour Avenue and North Street. It was completed in 1901. This factory is one of the nine factories owned by The Michigan Sugar Co.

Beets for the factory are raised by the farmers within a radius of fifty miles from Lansing. Local farmers send their beets by wagon, those farther away by steam or electric road. The farmers are paid by the ton. All seed is procured from the local factory. All help in weeding and thinning is also sent out by the factory. The beets sent to the factory must have the tops cut off before delivery. The beets are first weighed, then put into large flumes and floated into the factory in water. There they are first washed, weighed and cut into strips called cosittes, by a slicer. From the slicer they are carried on a belt to a cell of the diffusion battery, where it is treated with hot water the water displacing the sugar in the beet pulp. This sugar, as juice, is measured and goes into huge heating tanks. The

pulp goes into the pulp dryer, where it is dried and sold for cattle food. After heating the juice it is carried to the first carbonation where it is treated with lime. This lime is in a fluid state called milk of lime and is produced by burning lime stone. The purpose of this process is to eliminate the vegetable salts in the juice, and it is the first of several purifying stations. The juice is then forced through filter presses where the lime is removed, the juice going on to the second carbonation where it is again treated with milk of lime and carbonic acid gas produced from the lime kiln. It is again filtered through bag filters, heated and sent to the third carbonation where it is treated with sulphur fumes. The juice is filtered again and heated to a high temperature and sent to the evaporators where the last of the impurities are removed. It is now reheated through the "blow-ups" and sent to the vacuum pans where it is boiled until it grains, leaving this station as heavy molasses, very dark brown in color.

It is let down into centrifugals, which are copper receptacles lined with screen. Here it is revolved at a rapid rate, separating the molasses from the sugar. The sugar leaves the centrifugals and is carried on a scroll to the granulator where it is dried leaving these on a belt to the warehouse where it is cooled in a large storage box and sacked in 100 lb. sacks weighed by automatic scales.

Beet sugar factories make only granulated sugar. The brown sugar is too rich in vegetable salts to be palatable or desirable, and the molasses is not used on account of a disagreeable taste.

ICE PLANT

There is only one large ice plant in the city and that is the Pure Ice Co. at 911-921 Center St. between Saginaw St. and Elliott St.

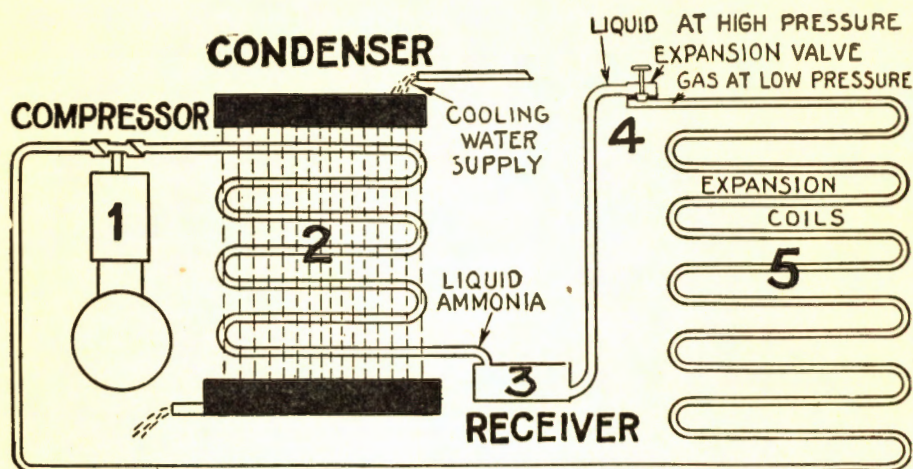
Water is pumped from wells into a large tank where it is chemically softened and piped to the freezing room. This softening process does away with any minerals that might discolor the ice. Large oblong galvanized tanks are filled with this softened water and carried by a traveling crane to the place where it is to be frozen.

The floor of the freezing room looks as if it were composed of oblong blocks about 1 ft. by 2 ft. with a little groove in each end of each block. By inserting a hand hook in one of these grooves the block may be lifted up showing a well of brine with the sides walled up with nine or ten rows of about 2 inch pipe. It is through these pipes that the ammonia gas flows as it expands and absorbs the heat from the brine thus lowering its temperature and consequently freezing the tank of water that is placed in the brine. This room contains about 21 thousand feet of pipe. After the tanks of water are lowered into the brine an air hose is connected into them so that a current of air is passing through the tank of water as it freezes thus bringing any mineral substance into the center of the cake. Just before the center of the cake freezes a double action hose is used and the water is drawn from the center of the cake and fresh water is put in. This takes out all mineral that might have been collected from the water by the action of the air.

It takes two days to freeze a cake of ice and there are 150 tons freezing all the time. Every other row of cakes is drawn every day thus drawing 75 tons each day. Each block drawn weighs about 315 pounds allowing 15 pounds for shrinkage. Four tanks of ice are lifted at a time with the crane and immersed in water of 60°. This loosens the ice from the tank so

that it is easily dumped into a slide which carries it to the storage room. These empty tanks are immediately filled with water and again placed in the brine where they will remain for two days.

The storage room holds about 5000 tons of ice. This room is kept at 30°. When the ice is taken out for delivery the large 300 pound cakes are cut into 25 and 50 pound pieces and then brought to our homes.



Elementary ammonia compression system; direct expansion. The essential parts are: 1, compressor; 2, condenser; 3, receiver; 4, expansion valve; 5, expansion coils. From the discharge valve of the compressor to the expansion valve is the high pressure portion of the system, and from the expansion valve to the suction valve of the compressor, the low pressure portion. **Cycle of operation:** 1, compressor compresses ammonia gas to about 150-170 lbs.; 2, gas is cooled in condenser and condenses, passing into receiver in a liquid state; 3, pressure is reduced by throttling in passing through expansion valve, causing vaporization of the liquid ammonia; 4, the latent heat of vaporization is absorbed from surrounding substances in passing through the expansion coils producing the refrigeration effect; 5, ammonia gas returns to compressor, thus completing the cycle.

This diagram explains the action of the ammonia in freezing the water. Mr. Reutter, the manager, said they would be glad to take classes through at any time.

LANSING LAUNDRIES

The laundries in Lansing are the American on E. Washtenaw St., Madden on Franklin Ave., Lansing on E. Washtenaw St., Davis on Washington Ave., and Sanitary Wet Wash on Edmore St.

The Lansing laundry is the largest. They employ from seventy to eighty-five people and have six Ford delivery trucks.

The clothes are first listed and marked then separated for the different grade of washing. Soft water is used here. (It is softened with salt about 30,000 gallons of water every day.) There are two long rows of modern washing-machines. Washing soda is used in the first water (and second too, if they are extra dirty). The clothes are taken through two hot suds and four hot and cold rinsing waters. They then go through a bleach, blueing, and starch. The blue is in powder form and costs fourteen dollars a pound. It takes nine spoonfuls to twelve gallons of water.

The ordinary things are dried in round tumbling dryers that revolve

from twelve to fifteen thousand times per minute. There is a larger drying tumbler for blankets, woolens and heavy material, that goes back and fourth very fast. For dresses and collars there is a conveying dryer. They are put on hooks on a stand and pushed into this very hot room for about twenty minutes. The collars are taken through a special machine for starch and dried, then they are wet again ready for ironing.

For shirts they use three machines to iron them. One each for the neck, sleeves, and body, then they are finished by hand. They have two large roller machines for all flat things, steam irons for dresses and aprons, and a board is used for those things that must be ironed by hand. The collars are first ironed out straight by machine, then around the edges. Next they are folded and pressed down, then put on a machine that creases them around the top. The hose are ironed and mended by machinery.

Everything is sorted alphabetically as they are finished. It takes about four days to get a washing finished and delivered.

COAL, WOOD, AND COKE

Coal Companies in Lansing.

Each yard is located very near one of the four railroads, so that the coal may be unloaded directly from the cars to storage sheds or piles.

Allen Coal Co., 315 E. Saginaw St.
 Cahill Coal Co., 621 E. Franklin Ave.
 Campbell, Geo. A., 1833 S. Washington Ave.
 Canfield, V. R., 637 E. Shiawassee St.
 Cohen & Barry, 201-202 Amer. St. Sav. Bk. Bg.
 Darling, A. M., 307 Beaver St.
 David Coal Co., 314 Wall St.
 Driscoll, L. A., 727 E. Michigan Ave.
 Hall-Higgins Co., Ltd., 823 Center St.
 Hankins-Peters Coal Co., E. Michigan and Hosmer St.
 Lansing Fuel Co., 706 E. Michigan Ave.
 Meagher, John, 306 E. Shiawassee St.
 Miller Coal Co., 703 E. Shiawassee St.
 New Way Coal Co., 711 E. Kalamazoo St.
 Norris, E. H. Coal Co., 323 Isbell St.
 Royal Coal Co., 920 S. Cedar St.
 Runnels, French Coal Co., 1034 S. Cedar St.
 Sleight, J. P., Coal Co., 614 E. Saginaw St.
 Snider, F. E., 1416 N. Larch St.
 South Lansing Coal Co., Hazel and River Sts.
 Square Deal Coal Co., 1128 S. Pennsylvania Ave.
 Standard Coal Co., 407 E. Shiawassee St.
 Stabler, C. E., & Co., 636 E. Michigan near M. C. R. R.
 West Main Coal Co., W. Main St.
 West Side Fuel Co., 601 Isaac St.
 Williams, E., Coal Co., 703 Shiawassee St.

Kinds of Coal

The two main varieties of coal are bituminous (soft) coal, and anthracite (hard) coal. Bituminous is black and easily broken, and when burned it

gives off a dense smoke and leaves a great deal of ash. It is the coal from which we get most of our steam, and which we use for manufacturing, smelting, and the making of coke. Anthracite is a hard coal of a high grade, which is used more for heating. It makes a very hot fire; it burns almost without smoke and with a moderate amount of ash.

Where Coal Comes From

It is estimated that the United States has about one half of the coal supply of the world. Soft coal is mined for sale in large quantities in twenty-five states.

Much of the coal which comes to Lansing is shipped from places in the Appalachian coal bed which extends from northern Pennsylvania down through these mountains into Alabama. It is eighty or ninety miles wide, and is one of the largest and richest of all coal deposits. There is another enormous bed of soft coal in Illinois, Indiana, and Kentucky, and quite a little in Ohio. Michigan also has coal mines, although we do not hear much about them. These mines are mainly near Bay City and Saginaw, but some coal is mined near Grand Ledge and near Williamston. Michigan coal is said to be of an inferior grade.

The only large beds of anthracite coal in America are located around Scranton, Penn. in the basin of the Susquehanna River about one hundred miles west of New York City. The only other large bed in the world is in China.

How Coal is Formed

The substance of coal was alive millions of years ago in the form of vegetation growing in swampy places like the peat-bogs of the present day. As the vegetation died it fell into the mire and water, where it did not decay as it would have done in the open air, but underwent chemical changes. The first series of changes resulted in its transformation into peat. After the accumulation of considerable beds of vegetable matter in the swamps, the surface of the land sank and these peat-bogs became the bottom of seas and lakes. Then sediment, such as sand and mud, was deposited over the accumulated vegetable matter. Thus buried, the vegetable matter was still more completely shut off from the air and underwent further chemical changes. At the same time the weight of the sediment compressed the deposits into more and more compact form. As the result of the chemical changes and the compression, the vegetable matter was gradually brought to the condition of coal.

Compton's Pictured Encyclopedia, Vol. 2 p. 811.

How Coal is Mined

In some coal mines the shaft goes straight down into the ground, in others it goes horizontally into a hillside. Some mines are as much as a thousand feet deep; and have miles of tunnels in them. The mines are lighted by electricity, and electric fans run by steam engines drive fresh air through the tunnels. The miners used to wear little lamps filled with oil on their caps. These look like little teapots with a soft twisted wick coming out of the spout. Now the electric lamp has taken the place of these oil lamps. All the tunnels are propped with heavy timbers, and huge pumps are kept running all the time to pump out the water that keeps dripping down. There are sometimes explosions of firedamp and other gases which result in fires and caveins with great loss of life.

There are chambers or rooms on each side of the tunnels. From these the miners take the coal. The miners drill holes in the walls, fill each hole with a blast, and a series of explosions bring down the walls of coal. The coal is loaded on little cars drawn by mules or running on electric railroads and drawn to the shaft. There the cars are elevated to the surface.

At soft coal mines the coal is usually loaded at once into coal cars and shipped away. At hard coal mines the coal is elevated straight up to the top of a huge building called a "breaker" which looks like a grain elevator. The coal as it moves downward through the machinery is crushed and sorted again and again. The slate and stone are all picked out. Coal is sold in eight different sizes, ranging from that of a grain of barley to great lumps. The larger coals, such as broken, egg, stove, and chestnut, are used mostly for heating, while the pea, buckwheat, rice, and barley coals are used more for the making of steam.

Uses of Coal

Coal is useful to us in many more ways than just to keep us warm. It is used to run railway engines. It is used in many power plants to generate the electricity which lights our homes and runs all our electrical appliances. Thousands of tons are used in the factories, especially the drop forges. Without coal we should have no gas, and the modern methods of melting iron and making steel by the use of coke would be unheard of.

Read—Compton's Pictured Encyclopedia, Vol. 2 p. 811-816.

There are some good pictures to show in this.

Also—Carpenter's "North America," p. 287-291, "We Visit a Coal Mine."

Coke

Coke is a by-product in the manufacture of gas from soft coal. The source of coke in Lansing is the gas plant which is north from the School for the Blind near Willow Street. The downtown office of the Lansing Fuel and Gas Co. is at 110 E. Michigan Avenue.

The company uses expensive, high grade soft coal called Rhoda coal from West Virginia. At the plant there are whole series of 'benches'. Each bench is a row of eight retorts, each five feet in circumference made of high grade heat resisting brick. A special electrical machine made and patented in France travels in front of the retorts and spreads the coal in them evenly. Each retort is closed air tight, and the firing begins. Coke is used to fire, and the temperature within the retort is raised to twelve hundred degrees. About two and a half pounds of coke are used up in re-firing for every one thousand cubic feet of gas secured.

During the eight hours that the firing continues, the gas and coal tar are being drawn out through a six inch cast iron exhaust pipe at the top of the retort. The tar remains in what is known as the hydraulic main. It rises above the water into a large bulb. The tar is drawn off every twelve hours. After passing through the hydraulic main which acts as a tar extractor, the gas passes through a 'bubble washer' and 'scrubber' where the gas is cleansed by passing water through it. Here the ammonia also is extracted. The gas goes through a purifying box and finally into a huge 'holder' with a capacity of 1,300,000 cubic feet of gas. About five and a half cubic feet of gas are secured from each pound of coal roasted.

The gas is distributed to the patrons in two ways—through low pressure mains and high pressure mains. The weight of the holder produces enough

pressure for patrons near by, and for those farther out high pressure mains are used in which the pressure on the gas has been increased to twenty pounds per square inch.

At the end of the eight hours of firing all the gas has been driven out of the coal, and what is left in the retorts is red hot coke. Sixty-six per cent of the coal is coke. The same machine before mentioned is used to push the coke out of the retorts into the 'quenching hoppers' at the back. Here it is soured with water to stop the burning. From the quenching hopper the coke is taken in carriers called 'buggies' to a screening hopper where it is sorted into three grades.

Coke may be ordered from the company's office and will be delivered. It is usually costs about half again as much as coal, since there is more bulk and more heating value for the weight.

Brick

The Briggs Co. brickyard is on East Michigan Avenue just a block beyond the Foster Avenue School. The various buildings, sheds and houses of the workmen occupy several acres of land. Clay for the bricks is dug from the clay bank some distance north from the buildings. The convenient bank of clay was the original reason for placing the brickyard where it is, and though the yard has been working for many years the supply is still good.

Only common brick are made at the yard from the clay alone. The clay is carried by small cars from the bank to the mixer in the sheds. The clay is pounded fine, sifted and then mixed with water in the mixing machine until it is a stiff paste. The wet clay is forced out of the side of the mixer through three brick shaped openings. As the bars of clay run steadily out on a sort of table, a wire brought down by a wheel cuts the bricks off just the right length. Men pile the wet bricks upon hand cars in such a way that the air can circulate through them freely. The hand cars now roll down the track toward the dryers. The dryers are a series of long, low narrow alleys just wide enough for one car and long enough for eight or ten cars. A track for the cars takes the place of any floor, and underneath each is a system of steam pipes. When the dryers are full the doors at the front are closed and the heat is turned on. After two days in the dryer the bricks are ready to be fired.

The kiln is built from the green bricks themselves. When finished it is a huge oblong pile of bricks about fifteen feet in height by thirty in width by forty in length. As one looks down the forty foot length of the pile, one sees at regular intervals, twenty small open arches next the ground. These open arches run right through under the pile from side to side. Coal is shoveled in at one end of the arch, and the other end serves as a draft for the fire. The arches over the fire bed are built first, and then each arch is continued upward to the full height of the pile. Each arch contains 16,000 bricks and there are twenty arches in a kiln. When the whole structure is complete, it is plastered up on the outside with mud. Coal for keeping the fires under the arches is piled up in front of the kiln. The fires are kept up continuously for nine days, the flames and heat circulating throughout the pile of bricks. It takes seven tons of coal to fire only one arch. After the kiln is cool the bricks are carried away on wagons to other sheds.

The brickyard, when working, produces about 45,000 bricks a day, or between five and six million bricks a year. The common bricks are used for all walls, except the front, of many buildings such as stores and shops.

They are used for the inside walls of most buildings. The brickyard makes no fancy or colored bricks such as are used for store fronts or ornamental work. The bricks are nearly all sold in and near Lansing.

Cement

Read Carpenter "How the World is Housed," page 122-126. Cement may be obtained in Lansing at the following places where building materials are sold:

Briggs Co., 400 E. Michigan Ave.

Dubois & Hughes, 421 S. Washington Ave.

Stone

Read Carpenter "How the World is Housed," page 110-122.

Common field stones, of which many walls and porches in the city are built, are brought from the farmers' stone piles in the country near by.

LUMBER

Lumber Companies in Lansing

Rikerd Lumber Company.

Offices:—336 E. Michigan Avenue and 417 E. Franklin Avenue.

Yards:—The first yard is at 336 E. Michigan Ave. on the south side of the street on the river bank. The New York Central R. R. runs past the yard. The yard contains five acres of land.

The second yard is at 417 E. Franklin Ave. near the Pere Marquette and Michigan Central tracks. This yard contains two acres. The Rikerd is the largest lumber company in Lansing, one hundred and fifty men being employed in both yards.

Kraas Lumber Company.

Office: 106 Depot Street.

Yard: The yard, which is 400 by 700 feet, is on the corner of Depot Street and Michigan Ave. The New York Central R. R. runs past the yard. Thirty-five to forty men are employed here.

Hager Lumber and Coal Company.

Office: 1125 S. Pennsylvania Ave.

Yard: The yard, which contains two and one-half acres of land, lies just north of Potter Park beside the Grand Trunk tracks. Ten men are employed.

Cove Lumber and Finish Company:

Office: 631 E. Michigan Ave.

Yard:—The yard, 100 by 450 feet, is in the rear of the office. The Michigan Central R. R. runs past the yard. Nine men are employed.

Hall Lumber Company.

Office:—600 E. Michigan Avenue.

Yard:—The yard, 340 feet square, is at 300 N. Larch Street near the Michigan Central tracks. Fifteen men are employed.

Capitol City Lumber Company.

Office: 632 E. Michigan Avenue.

Yard:—The yard is beside the Michigan Central tracks in the rear of the office.

Where the Lumber Comes From

The lumber we use comes from almost every part of the United States. Oregon and Washington furnish fir and spruce; Louisiana, Mississippi, Arkansas and Texas abound in yellow or southern pine; Florida and Georgia furnish cypress; West Virginia and Arkansas furnish oak; and Michigan and Wisconsin furnish hemlock. Maple and chestnut also come from the south, and redwood from the west coast.

Lumbering

Huge lumber camps may be found in the wooded parts of these states where many men are at work felling the trees. Often a whole town with modern conveniences is built up in a few days on the edge of one of these wooded tracts. Here the lumbermen with their families live in comfortable homes like ours except that they are portable.

When a lumber company opens operations in a new tract they first run a railroad into the section. Branches, which are constantly being taken up and relaid, are run out in every direction from the main line. Now the log cutters in teams of two men begin felling the trees. Their equipment consists of a cross-cut saw, an axe, some wedges and a bottle of kerosene to oil the saw. They fell the trees, top off the branches and saw the log into shorter lengths.

The skidding and loading crew now begins work. In many parts of the country, especially in the south, this work is done by machinery. A large machine with steel cables and grab hooks is attached, stands on the railroad track. The grab hook is attached to a log, and as the cable is wound up the log is snaked along to the side of the track. Now the log is seized by a cable from a loading boom, swung up into the air, and laid down upon the log car set to receive it.

Work at the Saw Mill

The train loads of logs are carried to the saw mill and unloaded into the millpond. The logs can be more easily sorted and stored in water. The logs enter the mill through a chute by means of an endless chain conveyor. On the log deck the scaler grades the logs according to size and quality of wood. Then steel arms move forward and roll the log down an incline to the band saw carriage. The carriage runs the log against the band saw which cuts a plank from its side at each trip. The planks drop upon rolls which move them forward to the edger. This machine removes the bark edges and rips the planks into various widths. They pass now to the trimming machine which cuts out defective spots and trims them to standard lengths. The lumber is now cut, ready to be dried and stored.

If a log is large and of good quality it is squared up by the band saws, trimmed to proper length, and sent out at once as structural timber. In other cases the log is squared up and sent to the gang saw where it is cut into boards of like thickness at one operation. The gang saw is a series of circular saws set on the same spindle so that they all rotate at once.

The rough lumber is dried in two ways. Some is piled in dry sheds to season for several months. The rest, and usually the best lumber, is dried in kilns. The heat and moisture in these kilns is kept just right so that the lumber will dry without warping or splitting, from three to six days. The lumber is allowed to stand in cooling sheds for some time after drying.

The lumber now goes to the planing mill. Here the boards are dressed down, and much material is worked up into flooring, ceiling, siding, mould-

ing, casing, base, etc. After its trip through the planing mill the lumber is ready to be shipped away to the city lumber yards.

Lumber at the Lansing Yards

All the Lansing yards are situated beside a railroad track so that the lumber can easily be unloaded from the freight trains. About 10% of the lumber received in Lansing is rough, and the other 90% is dried, dressed and already milled to flooring, siding, moulding, ceiling, casing, base, etc. The lumber is unloaded and carefully piled under sheds. The rough lumber is ripped, planed and finished just as at the planing mill already described. Some oak lumber is received green, and has to be kiln dried before being made into finish. When a contractor orders lumber it is cut to lengths, machine sanded and made into inside cabinet work to meet his requirements. The lumber companies also deliver the lumber to the building sites.

Read also Carpenter, "How the World is Housed," pages 64 to 90.

Kinds of Lumber Used, and Location from Which Each is Obtained

	Kind of Lumber	Location
"Bill Stuff" (studding, rafters, joists, sheeting, etc.)	Yellow pine	La., Tex., Miss., Ark.,
	Hemlock	Ga., and Ala.
	Fir (sometimes used for rafters)	Mich. and Wis. Wash. and Ore.
Siding	Select white wood,	
	cypress and red cedar	Tennessee
	Redwood	Washington
	Some yellow pine	As above
Interior finish (casings, baseboards, flooring, moulding, stairs, etc.)	Oak	Tennessee
	Chestnut	Alabama
	Maple	Alabama
	Yellow Pine	South as mentioned above.
Shingles	Clear red cedar	Washington and British Columbia
	Asphalts (also handled at the yards)	Chicago, Lockport, N. Y. and Grand Rapids.

More yellow pine is used than any other one kind of lumber. More than one-third of the 40,000,000,000 board feet of lumber produced annually in the United States is yellow pine. Nearly one-third of the population of the south is directly or indirectly employed in producing and marketing this kind of lumber.

AUTOMOBILE FACTORIES OF LANSING

There are three large automobile factories in Lansing. Their names are: the Reo, the Olds, and the Durant-Star.

The Reo Automobile Factory is located on South Washington Avenue near the Grand Trunk depot. It manufactures nearly every type of car, namely: touring cars, sedans, coupes, sport models, trucks, Mackey cabs, and many others.

The Reo cars are the highest priced cars made in the city. It rates in price with a Buick.

At present the biggest item of production is the Reo Speed Wagon which is a light weight truck. These Speed Wagons are now being used for every class of city delivery because they cost the least to operate. The Speed Wagon has done more to popularize the passenger bus than any other motor vehicle. Our yellow busses are Reos.

The Olds Automobile Factory is located in the south part of the city near the river on Isaac Street. It is the oldest factory in the city and also manufactures coupes, sedans, trucks, touring cars, sport models, and others.

The Durant-Star is a comparatively new factory and is located on the west side on Verlinden Street and Michigan Avenue. The Durant and Star cars are entirely different makes of automobiles. The Star is a much cheaper model and ranks along with the Ford car. The Durant-Star factory is considered the most sanitary and well organized plant in the city.

The three above mentioned factories are very considerate of their employees. Rest rooms, cafeterias, club houses, nurses, and physicians are provided. The Reo has moving pictures.

Besides these three factories Lansing also has an Auto Body Factory on East Franklin Avenue. They make more Star Bodies than anything else.

The Duplex Truck factory up to date has been located on S. Washington and Mount Hope Avenues. The factory building has been purchased by the Reo Automobile Company. The Duplex Truck Company will continue to manufacture trucks in their new location on Hosmer.

Lastly Lansing has a Motor Wheel Corporation on East Saginaw street where all kinds of automobile wheels, including disc wheels, are manufactured

LEADING RETAIL STORES

Lansing has many retail clothing stores that supply the needs of Lansing people and those in the surrounding localities.

The department stores are: F. N. Arbaugh Co., 401 S. Washington Ave., J. W. Knapp, 222 S. Washington Ave., and Dancer-Brogan, Prudden Building, corner of Washington and Michigan. Arbaugh's and Knapp's carry out the department idea more completely than does Dancer-Brogans. The Arbaugh Co. has a self-serve grocery in the basement.

Some leading dry goods stores are Mills Dry Goods, 108 S. Wash. Ave., and O'Connell Bros., 320 S. Wash. Ave.



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